

What is claimed is:

1. A method of performing threat assessment within a vehicle comprising:
  - detecting at least one object;
  - determining kinematics of the vehicle;
  - 5 determining kinematics of said at least one object;
  - determining a brake threat number in response to said vehicle kinematics and said kinematics of said at least one object; and
  - 10 determining a threat of said at least one object in response to said brake threat number.
2. A method as in claim 1 further comprising:
  - determining a steering threat number in
  - 15 response to said vehicle kinematics and said kinematics of said at least one object; and
  - determining a threat of said at least one object in response to said steering threat number.
3. A method as in claim 1 wherein
  - 20 determining kinematics of said vehicle and
  - determining kinematics of said at least one object
  - comprise:
    - determining a path of the vehicle; and
    - determining a path of said at least one
    - 25 object.
4. A method as in claim 1 wherein
  - determining kinematics of said vehicle and
  - determining kinematics of said at least one object
  - comprise determining relative position, velocity, and

acceleration of said at least one object relative to the vehicle.

5        5.    A method as in claim 1 wherein determining kinematics of said vehicle and determining kinematics of said at least one object  
comprise determining yaw rate of the vehicle.

6.    A method as in claim 1 wherein determining said brake threat number comprises:

10        determining a deceleration at zero range value; and

      determining a maximum vehicle deceleration value.

7.    A method as in claim 6 wherein determining said brake threat number further  
15        comprises dividing said deceleration at zero range value by said maximum vehicle deceleration value.

8.    A method as in claim 1 wherein determining said brake threat number comprises determining an average braking value.

20        9.    A method of performing threat assessment within a vehicle comprising:

      detecting at least one object;

      determining kinematics of the vehicle;

25        determining kinematics of said at least one object;

      determining a steering threat number in response to said vehicle kinematics and said kinematics of said at least one object; and

30        determining a threat of said at least one object in response to said steering threat number.

10. A method as in claim 9 further comprising:

determining a brake threat number in response to said vehicle kinematics and said  
5 kinematics of said at least one object; and

determining a threat of said at least one object in response to said brake threat number.

11. A method as in claim 9 wherein determining said steering threat number comprises:

10 determining a lateral acceleration at zero range value; and

determining a maximum lateral acceleration value.

12. A method as in claim 11 wherein  
15 determining said steering threat number further comprises dividing said lateral acceleration at zero range value by said maximum lateral acceleration value.

13. A method as in claim 9 wherein  
20 determining said steering threat number comprises determining an average lateral acceleration value.

14. A threat assessment system for a vehicle comprising:

at least one object detection sensor  
25 generating at least one object detection signal; and

a controller coupled to said at least one object detection sensor and determining a braking threat number and a steering threat number in response to said at least one object detection  
30 signal, said controller determining a threat of said at least one object in response to said braking threat number and said steering threat number.

15. A system as in claim 14 wherein said controller performs at least one countermeasure in response to said braking threat number.

5 16. A system as in claim 14 wherein said controller reduces traveling speed of the vehicle when said brake threat number is above a predetermined value.

10 17. A system as in claim 14 wherein said controller reduces traveling speed of the vehicle when said steering threat number is above a predetermined value.

15 18. A system as in claim 14 wherein said controller adjusts direction of travel of the vehicle when said steering threat number is above a predetermined value.

19. A system as in claim 14 wherein said controller adjusts direction of travel of the vehicle when a brake threat number is above a predetermined value.

20 20. A system as in claim 14 wherein said controller, in determining a braking threat number and a steering threat number, determines a deceleration at a zero range profile, a maximum vehicle deceleration profile, a lateral acceleration at zero range profile, and a maximum lateral acceleration profile.

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